REMARKS

The Examiner is thanked for the careful examination of the application, and for the suggestions for amending the application.

By the foregoing amendments, the only two independent claims claims 1 and 17 are amended. In addition, dependent claims 23 and 24 are amended merely to renumber them to correct the omission of claim 22.

Information Disclosure Statements

The Examiner is thanked for considering the information submitted with the Information Disclosure Statements on August 24 and August 25, 2001. However, the Examiner is advised that the reference to the parent application in the Information Disclosure Statement filed on August 29, 2001 should read Serial No. 09/255,852.

The Examiner is also advised that an electronic Information Disclosure Statement was filed in this application on February 3, 2003. In addition, paper Information Disclosure Statements were filed on February 10, 2003 and March 13, 2003. The Examiner is respectfully requested to consider the information submitted with these last three Information Disclosure Statements and to return to Applicants attorney acknowledgment of such consideration.

The Examiner is further advised that a Preliminary Amendment was filed in this application on February 10, 2003. The Preliminary Amendment adds new claims 25-31 to the application.

35 U.S.C. §112, First Paragraph:

The Examiner has rejected claims 1-23 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, the Examiner alleges that the term "effective length" is not adequately described.

In response to this rejection, the Examiner is advised that the "effective length" is the length of the hole that has an *effect* on the relevant process. In particular, in the present situation, the relevant process is potential diffusion. Accordingly, the effective length is the length of the hole that has a bearing on any potential diffusion.

With regard to the preferred disclosed embodiment, the Examiner's attention is directed to page 22 of the specification, wherein it indicates that the effective length is the minimum diameter portion of the through-holes 25. See page 22, lines 3-4. However, the present invention is not limited to the preferred disclosed embodiment. Nevertheless, such description would enable one of ordinary skill in the art to understand the scope of the invention.

The Examiner's attention is also directed to U.S. Patent No, 6,245,396, in which claims were allowed with the term "effective hole length".

In this sense, the term "effective length" is self-explanatory, and thus should be well understood by those of ordinary skill in the art.

Accordingly, in view of the foregoing explanation, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejection under 35 U.S.C. §112, first paragraph.

With regard to claim 17, the term "effective length" has been changed to length of a minimum diameter portion.

35 U.S.C. §112, Second Paragraph:

Claims 1-23 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter that the Applicant regards as the invention. Specifically, the Examiner alleges that an apparatus is what it is and not what it does and that the condition $uL/D > 1$ is dependent upon the flow rate and not the apparatus by itself.

In response to this rejection, claim 1 has been amended. Specifically, as a result of the amendment, it is noted that the equation $uL/D > 1$ is now part of a means plus function claim element. Specifically, claim 1 includes "means for delivering a first gas to the plasma generating space so that it passes through the through-holes at velocity *u* such that an equation $uL/D > 1$ is satisfied, where L represents an effective length of the through-holes and D represents an inter-diffusion coefficient between the first gas and the reactive gas". It is also noted that the reactive gas is supplied by a "means for delivering into the interior space a reactive gas...".

Accordingly, in accordance with 35 U.S.C. §112, sixth paragraph, the structure of the apparatus can be defined in terms of the function it performs. Accordingly, an

apparatus will only infringe claim 1, if the apparatus has the appropriate "means" which are enabled to deliver certain gases at certain velocities such that the equation uL/D > 1 is satisfied. Since 35 U.S.C. §112, paragraph 6 enables structure to be defined in terms of the function that it performs, the now amended claim 1 clearly satisfies 35 U.S.C. §112, second paragraph. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of claim 1.

Similar amendments have been made to claim 17, except without the specific use of means plus function language. Accordingly, claim 17 also satisfies 35 U.S.C. §112, second paragraph.

The remaining dependent claims depend from either claim 1 or claim 17, and thus also satisfy 35 U.S.C. §112, second paragraph.

In regard to claim 23 (now claim 22), the claim will only be infringed if the relevant device is set such as to deliver oxygen. Accordingly, one of ordinary skill in the art will be able to tell if an apparatus infringes claim 23. As a result, the claim is not indefinite.

Accordingly, in view of the foregoing amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1-23 under 35 U.S.C. §112, second paragraph.

All other matters being addressed, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections and to find the application to be in condition for allowance.

In the event that there are any questions concerning this response, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.

Respectfully submitted,

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office Fax. No. (703) 872-9630 on May 13, 2003.

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Mark-up of Claims 1, 17, 23 and 24

1. (Amended) A CVD apparatus comprising:

a vacuum vessel having an inside in which plasma is produced to generate active species, and film deposition is performed on a substrate by using the active species and a reactive gas;

an electrically-conductive partitioning wall section formed in the vacuum vessel for separating the inside thereof into two chambers;

a first one of the two chambers is formed as a plasma-generating space and contains a radio-frequency electrode;

a second one of the two chambers is formed as a film deposition process space and contains a substrate support mechanism for mounting a substrate;

the partitioning wall section includes a plurality of through-holes to allow communication between the plasma-generating space and the film deposition process space[, the through-holes satisfy the condition of $uL/D > 1$, where u represents a gas flow velocity in the through-holes, L represents an effective length of the through-holes, and D represents an inter-diffusion coefficient];

the partitioning wall section includes an interior space separated from the plasma-generating space and communicating with the film deposition process space through a plurality of diffusion holes;

means for delivering into the interior space a reactive gas supplied from outside the vacuum vessel, whereby the reactive gas thus supplied into the interior space is fed to the film deposition process space through the plurality of diffusion holes;

means for delivering a first gas to the plasma-generating space so that it passes through the through-holes at velocity u such that an equation uL/D > 1 is satisfied where L represents an effective length of the through-holes and D represents an inter-diffusion coefficient between the first gas and the reactive gas; and

[means for delivering into the interior space a reactive gas supplied from outside the vacuum vessel, whereby the reactive gas thus supplied into the interior space is fed to the film deposition process space through the plurality of diffusion holes; and]

means for supplying an RF power to the radio-frequency electrode for generating a plasma discharge in the plasma-generating space, by which the active species produced in the plasma-generating space are fed into the film deposition process space via the plurality of through-holes formed in the partitioning wall section.

17. (Amended) A CVD apparatus comprising:

a vacuum vessel having an inside in which plasma is produced to generate active species, and film deposition is performed on a substrate by using the active species and a reactive gas;

an electrically-conductive partitioning wall section formed in the vacuum vessel for separating the inside thereof into two chambers;

a first one of the two chambers is formed as a plasma-generating space and contains a radio-frequency electrode;

a second one of the two chambers is formed as a film deposition process space and contains a substrate support mechanism for mounting a substrate;

the partitioning wall section includes a plurality of through-holes to allow communication between the plasma-generating space and the film deposition process space [, the through-holes satisfy the condition of $uL/D > 1$, where u represents a gas flow velocity in the through-holes, L represents an effective length of the through-holes, and D represents an inter-diffusion coefficient];

the partitioning wall section includes an interior space separated from the plasma-generating space and communicating with the film deposition process space through a plurality of diffusion holes;

a device for delivering into the interior space a reactive gas supplied from outside the vacuum vessel, whereby the reactive gas thus supplied into the interior space is fed to the film deposition process space through the plurality of diffusion holes;

a device for delivering a first gas to the plasma-generating space so that it passes through the through-holes at velocity u such that an equation $uL/D > 1$ is satisfied where L represents a length of a minimum diameter portion of the through-holes and D represents an inter-diffusion coefficient between the first gas and the reactive gas; and

[a device for delivering into the interior space a reactive gas supplied from outside the vacuum vessel, whereby the reactive gas thus supplied into the interior space is fed to the film deposition process space through the plurality of diffusion holes; and]

a device for supplying an RF power to the radio-frequency electrode for generating a plasma discharge in the plasma-generating space, by which the active species produced in the plasma-generating space are fed into the film deposition process space via the plurality of through-holes formed in the partitioning wall section.

[23] 22. (Amended) The CVD apparatus as claimed in claim 17, wherein the first gas is oxygen.

[24] 23. (Amended) A CVD apparatus as stated in claim 1, further comprising an RF power supply for feeding a cleaning RF power and a switch for connecting the partitioning wall section to the RF power supply with suitable timing so as to produce a cleaning plasma in the film deposition process space.